

WHAT IS CLAIMED IS:

1. A method for diagnostically evaluating energy consumption of a facility, comprising:
- receiving energy consumption data associated with
- 5 the facility;
- generating facility data associated with the facility;
- receiving external variable data associated with the facility corresponding to the energy consumption data;
- 10 generating a first energy consumption model for the facility using the facility data, the energy consumption data, and the external variable data, the first energy consumption model corresponding to actual energy consumption of the facility;
- 15 generating a second energy consumption model for the facility using the facility data and the external variable data, the second energy consumption model corresponding to expected energy consumption of the facility; and
- 20 diagnostically evaluating the energy consumption of the facility using the first and second energy consumption models.
2. The method of Claim 1, further comprising
- 25 validating the energy consumption data.
3. The method of Claim 2, wherein validating the energy consumption data comprises:
- analyzing the energy consumption data for missing
- 30 data; and
- reconstructing the missing data.

4. The method of Claim 3, wherein reconstructing the missing data comprises:

- identifying a comparable facility;
- retrieving energy consumption data associated with
- 5 the comparable facility; and
- reconstructing the missing data for a specified time period using the energy consumption data associated with the comparable facility.

10 5. The method of Claim 1, wherein receiving the energy consumption data comprises receiving the energy consumption data from an energy consumption database of an energy supplier.

15 6. The method of Claim 1, wherein receiving the energy consumption data comprises receiving the energy consumption data from a data collector disposed at the facility.

20 7. The method of Claim 1, wherein generating the facility data comprises generating the facility data using the energy consumption data.

25 8. The method of Claim 1, wherein generating the facility data comprises generating the facility data using physical characteristic data associated with the facility.

30 9. The method of Claim 1, wherein receiving the energy consumption data comprises receiving the energy consumption data remote from the facility.

10. The method of Claim 1, further comprising
identifying an energy consumption system of the facility
using the first energy consumption model, and wherein
generating the facility data comprises generating the
5 facility data based on the energy consumption component.

11. The method of Claim 1, wherein receiving the
external variable data comprises receiving environmental
data corresponding to the energy consumption data.

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12. The method of Claim 11, further comprising
validating the environmental data.

13. The method of Claim 1, wherein diagnostically
15 evaluating comprises:

determining energy usage for the facility based on
the second energy consumption model; and

comparing the energy usage based on the second
energy consumption model with the energy consumption
20 data.

14. The method of Claim 1, further comprising:
identifying a comparable facility; and
retrieving energy consumption data associated with
25 the comparable facility; and

wherein generating the first energy consumption
model further comprises generating the first energy
consumption model using the energy consumption data
associated with the comparable facility.

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15. The method of Claim 1, further comprising
determining a modification of an operating parameter of

an energy consumption system of the facility using the second energy consumption model.

16. The method of Claim 1, further comprising
5 determining whether a change of an energy consumption system of the facility is required based on the diagnostic evaluation, the change selected from the group consisting of a repair, a modification, and a replacement.

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17. The method of Claim 1, wherein generating the facility data comprises:

generating physical characteristic data
corresponding to the facility;

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generating energy usage characteristic data
associated with the facility; and

generating system data associated with the facility.

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18. The method of Claim 1, wherein receiving the energy consumption data comprises:

receiving aggregated energy consumption data
associated with the facility; and

generating disaggregated energy consumption data
associated with the facility using the aggregated energy
25 consumption data.

19. The method of Claim 1, wherein generating the facility data comprises:

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generating physical characteristic data associated
with the facility; and

generating energy usage characteristic data
associated with the facility.

20. A system for energy consumption diagnostic evaluation of a facility, comprising:

a processor;

5 a memory coupled to the processor;

an energy consumption database accessible by the processor, the energy consumption database having energy consumption data associated with the facility;

10 a facility database accessible by the processor, the facility database having facility data associated with the facility;

15 an external variable database accessible by the processor, the external variable database having external variable data corresponding to the energy consumption data;

20 a configuration engine residing in the memory and executable by the processor, the configuration engine operable to generate a first energy consumption model using the facility data, the energy consumption data, and the external variable data, the first energy consumption model corresponding to actual energy consumption of the facility, the configuration engine further operable to generate a second energy consumption model using the facility data and the external variable data, the second energy consumption model corresponding to expected energy consumption of the facility; and

25 an analysis engine residing in the memory and executable by the processor, the analysis engine operable to diagnostically evaluate energy consumption of the facility using the first and second energy consumption models.

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21. The system of Claim 20, further comprising a validation engine residing in the memory and executable by the processor, the validation engine operable to validate the energy consumption data.

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22. The system of Claim 21, wherein the validation engine is operable to analyze the energy consumption data for missing data and, in response to determining that missing data exists, reconstruct the missing data.

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23. The system of Claim 20, wherein the energy consumption data comprises energy consumption data residing in an energy consumption database of an energy supplier.

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24. The system of Claim 20, wherein the energy consumption data comprises:

aggregated energy consumption data associated with the facility; and

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disaggregated energy consumption data associated with discrete energy consumption systems of the facility.

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25. The system of Claim 24, wherein the analysis engine is further operable to generate the disaggregated energy consumption data from the aggregated energy consumption data.

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26. The system of Claim 20, wherein the facility data is generated based on the energy consumption data.

27. The system of Claim 20, wherein the facility data comprises physical characteristic data associated with the facility.

5 28. The system of Claim 27, wherein the facility data further comprises energy usage characteristic data associated with the facility.

10 29. The system of Claim 28, wherein the facility data further comprises system data associated with the facility, the system data indicating a present energy consumption system of the facility.

15 30. The system of Claim 20, wherein the external variable data comprises environmental data corresponding to the energy consumption data.

20 31. The system of Claim 30, further comprising a validation engine residing in the memory and executable by the processor, the validation engine operable to validate the environmental data.

25 32. The system of Claim 20, wherein the analysis engine is further operable to determine a modification to an operating parameter of an energy consumption system of the facility based on the diagnostic evaluation.

30 33. The system of Claim 32, wherein the analysis engine is further operable to identify an energy consumption component of the energy consumption system.

34. The system of Claim 33, wherein the analysis engine is further operable to determine whether a repair of the energy consumption component is required based on the diagnostic evaluation.

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35. The system of Claim 33, wherein the analysis engine is further operable to determine whether a replacement of the energy consumption component is required based on the diagnostic evaluation.

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36. The system of Claim 20, wherein the energy consumption data comprises energy consumption data retrieved from a data collector disposed at the facility.

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37. The system of Claim 20, wherein the analysis engine is further operable to determine operating parameter data for an energy consumption system of the facility corresponding to each of the first and second models.

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38. The system of Claim 20, wherein the energy consumption data comprises energy consumption data associated with a comparable facility.

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39. The system of Claim 20, wherein the analysis engine is further operable to generate operating parameter data associated with an energy consumption system of the facility corresponding to each of the first and second energy consumption models.

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